to consider as of very little prognostic importance. Pericarditis was not even mentioned as among the causes of termination in any of these cases, and in but 5 instances was a cardiac dilatation the immediate cause of exitus. After a careful study of these cases, in three only can the pericardial inflammation or adhesions be considered as probably actively concerned in the cause of death. Chronic endocarditis was the terminal factor in 4 instances, acute endocarditis in 1, lobar pneumonia in 8, sepsis in 9, empyema in 1, and tuberculosis in 9. General changes attributable to alcoholism appear as the probable cause of death in 6 instances, and definitely syphilitic lesions in 4, myocarditis of non-syphilitic nature in 4, and traumatism in 2.

In the chronic fibrous form of pericarditis without adhesions the cause of death is even more indefinitely connected with the pericardial lesion, and, taken as a whole, we again wish to express our conviction of the very minor role which pericarditis in any form plays in prognosis, except as a measure of the degree or extent of any general infection.

CONCLUSIONS. In conclusion, we wish to summarize those points which have especially impressed themselves upon us in the course of this study, although some of the evidence leading us to these conclusions has been but incompletely expressed in the paper:

Pericarditis is a lesion secondary in nature, rarely or never primary. The complication, for such it must be considered, is in most cases not in itself serious except when of the suppurative variety, and in all instances it is more noteworthy as indicating the general condition in which it arises than on account of its own importance. It is, therefore, of little relative clinical importance, except as a diagnostic index, and in suppurative cases. True myocarditis is infrequently associated with pericarditis, but myocardial degeneration is commonly found, and is due in most instances not to the pericarditis, although generally caused by the same condition as the pericardial inflammation. Death rarely results in pericarditis from this lesion. Independent myocardial degeneration leading to dilatation of the heart, and especially fatty degeneration of the myocardium, is a predisposing or determining factor toward pericarditis. Overaction of the heart may induce pericardial inflammation. Serofibrinous pericarditis is in most instances an evidence of generalized bacteremia. Chronic adhesive pericarditis is a lesion of great frequency, often impossible of diagnosis, and in itself of very little clinical significance or importance. Serious symptoms arise from adhesive pericarditis only when the myocardium itself is seriously diseased, either concomitantly or quite independently. The signs usually cited as characteristic of pericardial synechia develop only when mediastinal inflammation or adhesions of marked degree are present in addition to the pericarditis.

NORMAL AUSCULTATORY DIFFERENCES BETWEEN THE SIDES OF THE CHEST.

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Differences at the Bases Behind. From those who are concerned to make the earliest possible diagnosis of pulmonary tuberculosis we hear more and more loudly each year the command to study with all possible care and attentiveness the auscultatory differences between corresponding portions of the two sides of the chest, as well as between different portions of the same lung. The slightest variation in pitch, quality, intensity, or duration of either inspiration or expiration at any point, as compared with conditions in the corresponding portion of the other lung, is, we are told, a sign to be noted, since it may be one of the factors in a decision affecting the patient's whole future life.

If this is true, and I see no good reason to doubt it, it behooves us to know as much as we can about any differences existing between the auscultatory phenomena in the right lung and those in the left in the healthy chest. It has been clearly recognized, at any rate since Austin Flint's time, and by the great majority of competent practitioners, that the apices of the two lungs differ in a large proportion of healthy persons, the apex of the right being more like that we expect to find in beginning solidification (from any cause) than is the apex of the left. All this is too familiar to need repetition. I wish, however, to call attention to what I believe to be a fairly common difference between the right and the left base posteriorly.

In a series of 250 healthy cases recently examined with reference to this point, I found the difference to which I allude to be present in 67 per cent. In these cases I noticed that the breathing at the left base was notably louder and harsher than that at the right. In the majority of these it had also the quality described by the Germans as "rough." I have been unable to see that age, sex, the time of day, or the amount of food in the stomach had any effect upon this phenomenon; yet I found it sometimes present in the morning and absent in the evening, for reasons unknown to me. It seems to be distinctly less common in persons under twenty years of age.

I have nothing of importance to say as to the cause of this difference. Thinking that it might be due to the amount of gas in the stomach, I inflated a patient's stomach with air and auscultated the backs of the lungs before and after the inflation, but I could not see that any considerable effect was produced by this procedure. One might conjecture that the slightly lower position of the diaphragm upon the right, or the greater impingement of the heart upon the left than upon the right lung, might have some influence in producing the auscultatory differences to which I have referred, but these are unverifiable conjectures, and seem to me practically valueless. I have not found any differences in percussion or palpation accompanying the phenomena to which I have just referred.

Obviously, the only importance of the sign which I have described is that in case it is confirmed and established by the observations of other physicians it will slightly complicate our process of reasoning in regard to the soundness or unsoundness of the lungs as based upon physical examination. It may be that we shall have to make allowance for the differences to which I have just referred, as we have been in the habit of doing with the differences between the two apices.

DIFFERENCES IN THE LATERAL RECUMBENT POSITION. Almost every good clinician is familiar with the fact that when the patient is lying upon his side the restriction of the motion of this side of the thorax leads to differences in the phenomena obtained by palpation, percussion, and auscultation in the lower lung, as compared with the upper. Hence we are all of us chary of drawing conclusions from what we hear in a patient's chest in the lateral recumbent position. We all prefer to examine the patient, either sitting up or lying on his face, whenever one of these positions can be assumed without serious inconvenience. But I wonder how many of us would be able to state, promptly and correctly, just what are the differences between the upper and the lower sides of the chest of the patient lying upon his side. As a matter of permanent and accurate record, it seems to me worth while to formulate as accurately as we can the knowledge which we all of us now possess in a more or less inchoate form.

With this in view, I recently examined fifty normal chests with the subject in the lateral recumbent position. Briefly stated, the differences are as follows: (*a*) On palpation, increased tactile fremitus on the lower side; (*b*) on percussion, a combination of dulness with a tympanitic quality on the lower side; (*c*) on auscultation, an increase in the intensity of the spoken and of the whispered voice, with a slight prolongation of expiration and a raising of its pitch.

Summarily stated, these signs amount to the indications of a slight degree of condensation of the lung, such as we see in the upper part of a chest when a pleural effusion is present below.

It is perhaps also worth noting that in patients, both of whose lungs contain approximately an equal number of rales when the patient is examined in the sitting position, lateral decubitus increases the number of audible rales on the lower side.

THE PRACTICAL VALUE OF SPINAL PERCUSSION IN DISEASES OF THE MEDIASTINUM.[1]

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Curiously enough, the systematic study of normal vertebral resonance and of its pathological modifications has never come into general vogue as a routine method of physical examination, so that to most clinicians the technique of vertebral percussion, in comparison with the more familiar procedure of what may be termed mural percussion of the thorax, is virtually a closed book. Despite this indifference on the part of medical men in general, several noteworthy contributions have been published in recent years on the subject of spinal percussion and the various tonal changes thereby demonstrable in diseases of the thoracic and abdominal cavities. Twelve years ago, von Korányi[2] drew attention to the fact that in pleural effusions displacement of the posterior mediastinum abolished the normal resonance of the lower spinal vertebræ and produced a triangular patch of dulness extending therefrom to the unaffected side. The more recent investigations of Grocco[3] and his followers along these lines are too well known to call for more than passing comment. Nagel and de la Camp,[4] in a recent series of experimental and clinical studies, have clearly demonstrated the value of percussing the spinous processes as an aid to the diagnosis of enlarged bronchial and mediastinal lymph nodes. Ewart's careful original work[5] on percussion of the vertebræ and its correlation with dorsal percussion also forms a most important contribution, and will be referred to at more length in a subsequent paragraph, as will von Korányi's elaborate studies on the vertebral percussion zones.[6] In passing, it is of interest to recall the fact that almost half a century ago Piorry[7] advocated "pleximetry of the spine," and described in this connection a vertical band of universal vertebral *dulness!* Obviously, this cardinal error in acoustics is sufficient to dismiss this investigator's conclusions from serious consideration.

The subject matter of this communication deals primarily with the technique of spinal percussion and the application of this method of research to the clinical investigation of mediastinal lesions, which in the cases under consideration consist chiefly of enlarged bronchial and mediastinal lymph nodes met with in connection

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[1] Read by title at the meeting of the Association of American Physicians, Washington, D. C., May 11 and 12, 1909.

[2] Handbuch d. spec. Path. u. Therap., 1897, iv, 717.

[3] Rivista crit. di clinica med., 1902, iii, 13.

[4] Jahrbuch f. Kinderheilk., 1908, lxviii, 46.

[5] Lancet, 1899, ii, 261.

[6] Ztschr. f. klin. Med., 1906, lx, 295.

[7] Traité de Plessimétrisme, Paris, 1866.